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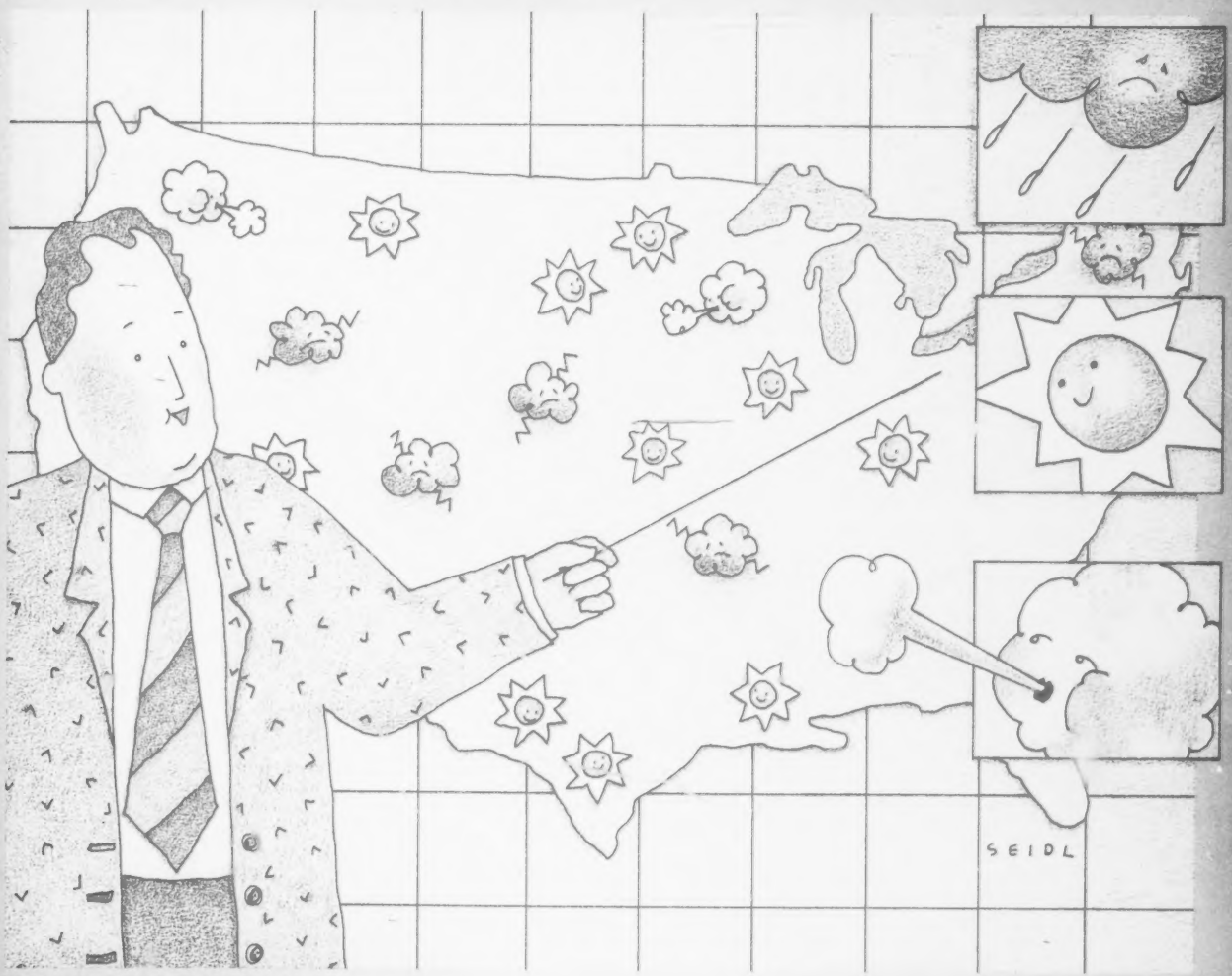

$24 BILLION SPELLS SUNNY SKIES Our Review

and Forecast of the LEC industry reveals a slight jump in spending

AT&T DISCOUNTS, MCI COMPLAINS

Long-distance war heats up with SDN price cuts

GTE, AT&T FORMALIZE SWITCHING VENTURE

Execs promise enhanced service for GTE telcos

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Telephony

INTEGRATING VOICE & DATA COMMUNICATIONS

Clouds will cast their shadows over the interexchange carriers this year, while the local exchange carriers bask in the sun. Cover design by Laura M. Doyle; illustration by E. Ann Seidl

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In the latest round of competitive battles between the two long-distance foes, AT&T offers volume discounts for its SDN customers while MCI attacks AT&T's latest competitive tariff offering

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Local exchange carrier executives share their thoughts on what will come to pass in 1989

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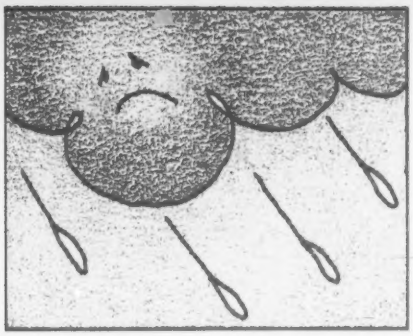
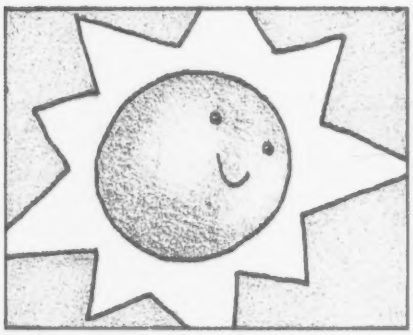
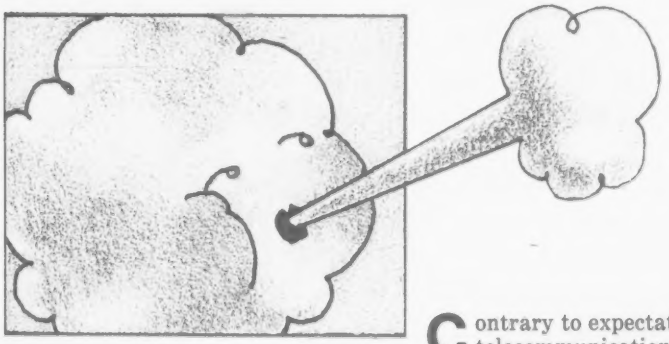
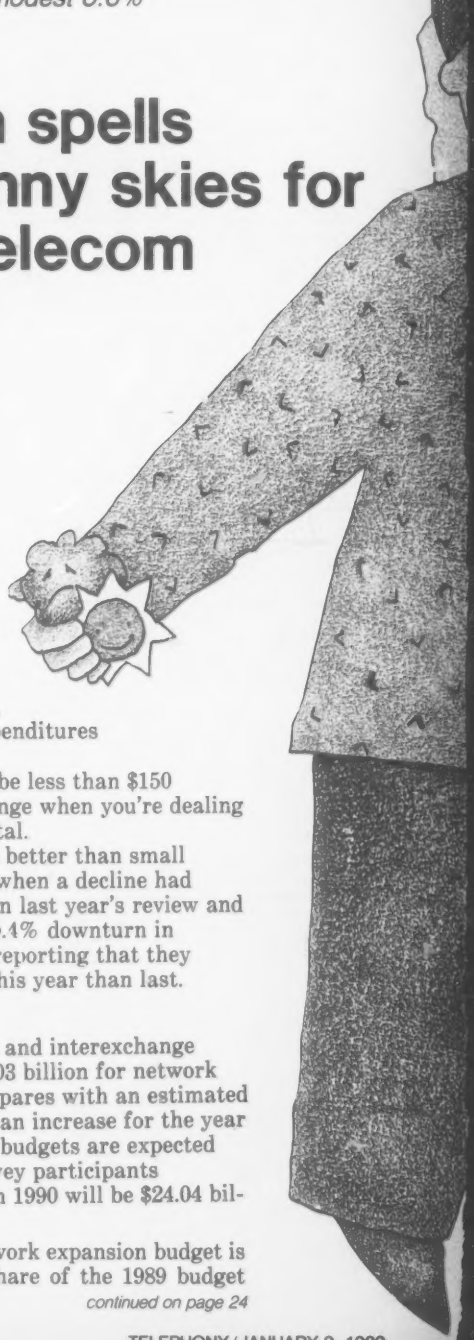


The 1989 forecast is somewhat cloudy on the long-distance plains, but the sun is shining on the local exchange. In other words, IXCs are down and LECs are up—with aggregate increase amounting to a modest 0.6%



$24 billion spells mostly sunny skies for the U.S. telecom industry





LEO ANDERSON,
Publishing Consultant

CZATDANA INAN,
Marketing Development and Research Director

Contrary to expectations, telecommunications expenditures will edge upward this year.

Even so, the increase will be less than $150 million, and that's small change when you're dealing with a multibillion-dollar total.

But small change ahead is better than small change behind, particularly when a decline had been expected. Participants in last year's review and forecast survey predicted a 0.4% downturn in 1989. Instead, they are now reporting that they expect to spend 0.6% *more* this year than last.

$24 Billion

U.S. local exchange carriers and interexchange carriers have budgeted $24.03 billion for network expansion in 1989. This compares with an estimated $23.88 billion spent in 1988, an increase for the year of $148 million. Next year's budgets are expected to hold even with 1989. Survey participants predict total expenditures in 1990 will be $24.04 billion.

More than 80% of the network expansion budget is spent by the LECs. Their share of the 1989 budget

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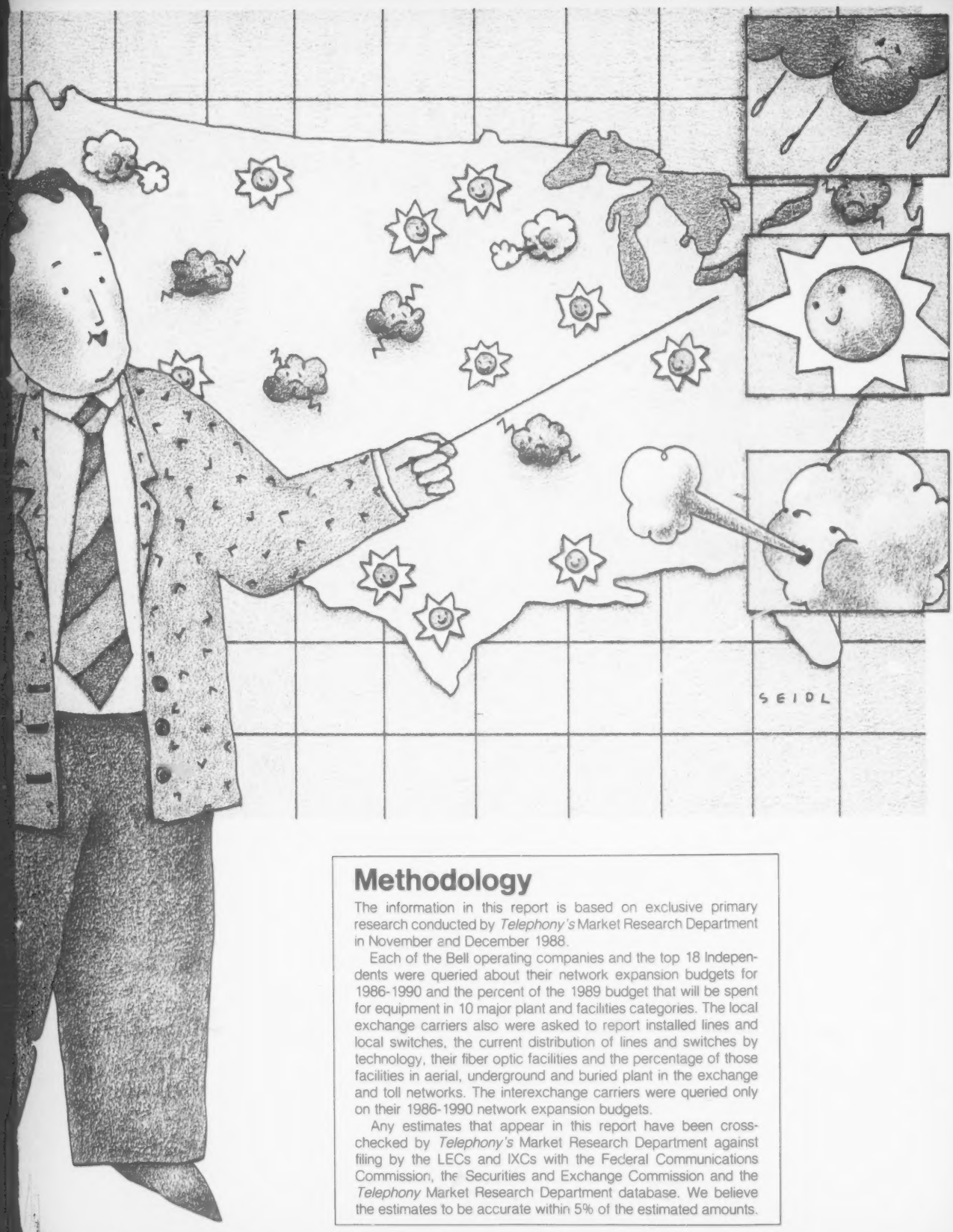


Methodology

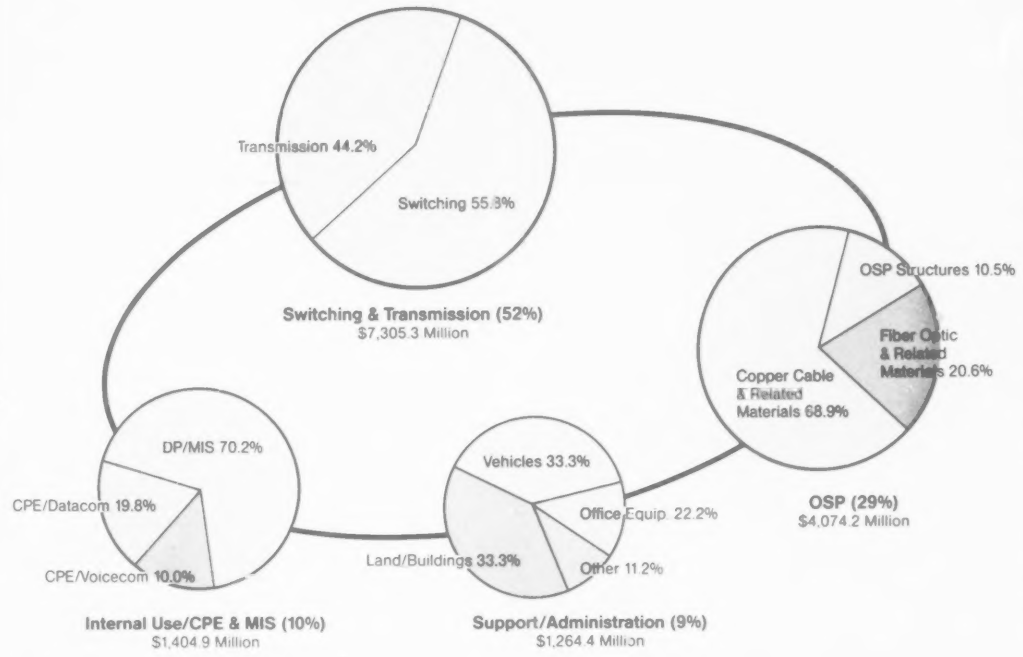
The information in this report is based on exclusive primary research conducted by *Telephony's* Market Research Department in November and December 1988.

Each of the Bell operating companies and the top 18 Independents were queried about their network expansion budgets for 1986-1990 and the percent of the 1989 budget that will be spent for equipment in 10 major plant and facilities categories. The local exchange carriers also were asked to report installed lines and local switches, the current distribution of lines and switches by technology, their fiber optic facilities and the percentage of those facilities in aerial, underground and buried plant in the exchange and toll networks. The interexchange carriers were queried only on their 1986-1990 network expansion budgets.

Any estimates that appear in this report have been cross-checked by *Telephony's* Market Research Department against filing by the LECs and IXCs with the Federal Communications Commission, the Securities and Exchange Commission and the *Telephony* Market Research Department database. We believe the estimates to be accurate within 5% of the estimated amounts.

Figure 1

BOCs' 1989 $14,048.8 MILLION SPENDING



TOTAL BUDGET ($000,000)

52% Switching & Transmission	
Switching	4,074.1
Transmission	3,231.2
29% OSP	
OSP Structures	421.5
Copper Cable & Related Materials	
Aerial	702.4
Underground	421.5
Buried	1,685.9
Fiber Optic & Related Materials	
Aerial	140.5
Underground	280.9
Buried	421.5
9% Support/ Administration	
Vehicles	421.5
Land & Buildings	421.5
Office Equipment	280.9
Other	140.5
10% Internal Use/ CPE & MIS	
CPE/Voicecom	140.5
CPE/Datacom	278.2
DP & MIS	986.2

Source: Telephony/Market Research

Sunny Skies *continued*

is $19.56 billion; the IXCs' share is $4.46 billion. And the IXC budget trend is significantly downward, while the LECs' budgets are heading slightly upward. Looking at recent history, IXC spending hit its peak in 1986, when budgets totaled $5.18 billion (Table 1). Since then it has been at $5.10 billion in 1987, $4.47 billion in 1988 and will drop to $4.46 billion this year, followed by a further drop to $4.4 billion in 1990.

The year of deep pockets for the LECs was 1987, when LEC budgets totaled $20 billion. Budgets dropped to an estimated $19.4 billion in 1988, but are expected to go up this year to $19.5 billion. They will increase again in 1990 to $19.6 billion.

Where Does It Go?

Figure 1 and Figure 2 show how the money will be spent in 1989. The Bell operating companies, which comprise 80% of the total LEC field, will spend 52% of their network expansion budgets on switching and transmission, 29% on outside plant, 10% on customer premises equipment and data processing/management information system equipment, and 9% on buildings and land, vehicles, office equipment and other support systems. The biggest single item in the $14 billion-plus total is $4.07 billion for switching equipment.

Pretty much the same patterns hold true for the 18

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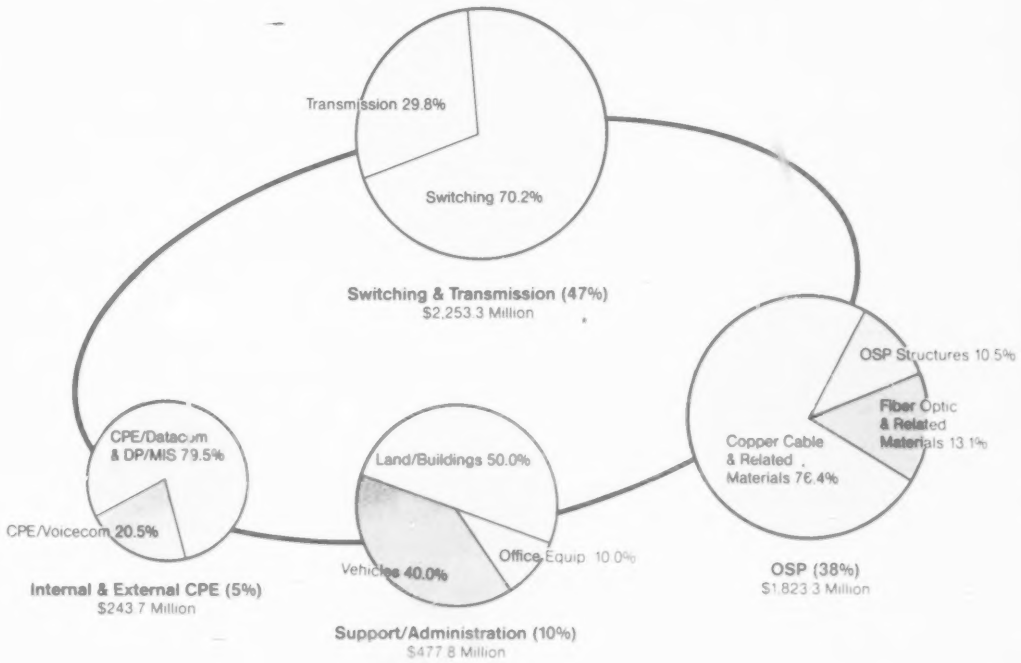
Figure 2

TOP 18 INDEPENDENTS' 1989 $4,798.1 MILLION SPENDING



TOTAL BUDGET ($000,000)

47% Switching & Transmission	
Switching	1,581.4
Transmission	671.9

38% OSP	
OSP Structures	191.9
Copper Cable & Related Materials	
Aerial	383.9
Underground	95.9
Buried	911.9
Fiber Optic & Related Materials	
Aerial	47.9
Underground	47.9
Buried	143.9

10% Support/ Administration	
Vehicles	191.9
Land & Buildings	238.0
Office Equipment	47.9

5% Internal & External CPE	
CPE/Voicecom	49.9
CPE/Datacom	193.8

Sunny Skies *continued*

largest Independent telephone companies, which were studied as a group. Switching and transmission also are big-ticket items in the Independents' budgets, although outside plant and land/buildings/vehicles/office equipment were relatively higher than the BOCs' outlays for these categories, probably because so much Independent territory is rural. As with the BOCs, the largest single item in the Independents' 1989 spending plans is switching equip-

continued on page 29

Table 1

INTEREXCHANGE CARRIER BUDGETS 1986-1990

($000,000)

	Actual 1986	Actual 1987	Projected 1988	Projected 1989	Projected 1990
AT&T Communications	2,556.8	2,659.6	3,000.0	3,000.0	2,900.0*
MCI	980.0	1,000.0	750.0	715.0	650.0*
US Sprint	1,101.0	996.0	625.0	650.0	650.0*
NTN	550.0	450.0	100.0	100.0	200.0
Total:	5,187.8	5,105.6	4,475.0	4,465.0	4,400.0

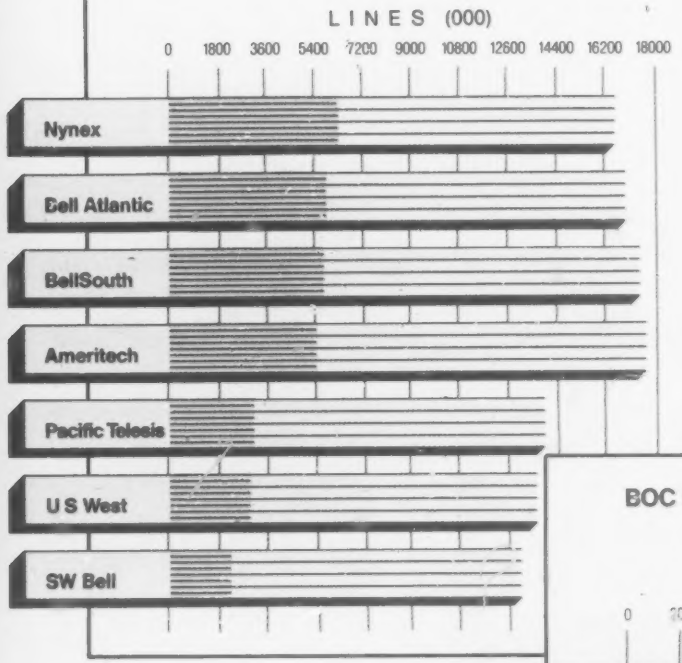
Source: Telephony Market Research

* estimated by Telephony

Figure 3

BOC DIGITAL LEADERS: EQUIPPED LINES

June 30, 1988



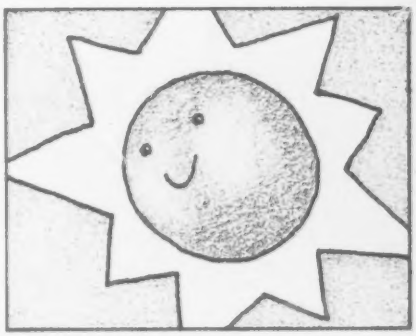
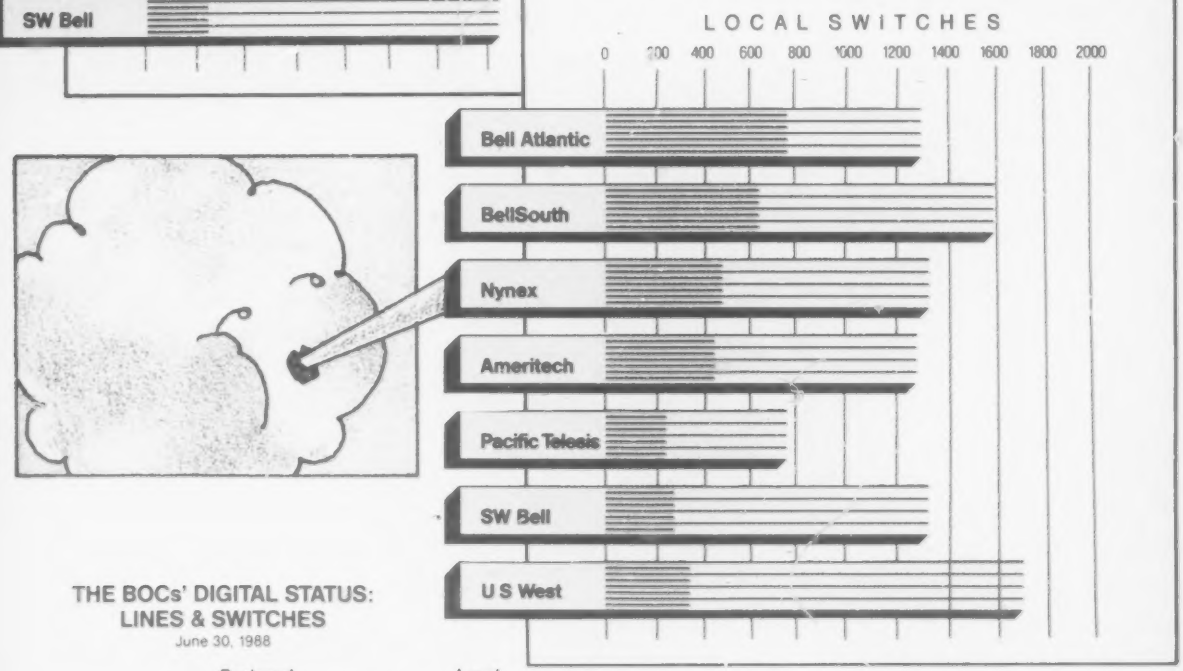


Figure 3A

BOC DIGITAL LEADERS: LOCAL SWITCHES

June 30, 1988



THE BOCs' DIGITAL STATUS: LINES & SWITCHES

June 30, 1988

	Equipped Lines[a]	% Digital	Local Switches	% Digital
Nynex	16,392,000	38%	1,292	56%
Bell Atlantic	16,919,000	35%	1,585	39%
BellSouth	17,515,000	34%	1,323	36%
Ameritech	17,594,000	26%	1,262	36%
Pacific Telesis	13,900,000	23%	744	33%
U S West	13,456,000	22%	1,321	21%
SW Bell	13,017,000	18%	1,706	20%
Total	108,793,000		9,233	

Source: Telephony/Market Research

a. Total CO line capacity (access lines average 85% of equipped lines)

Number of Local Switches

% Digital of Total

Source: Telephony/Market Research

Sunny Skies *continued*

ment, for which $1.5 billion is budgeted. The aggregate total of all budget items for the Independents in 1989 is $4.79 billion.

No attempt was made to analyze the spending of the rest of the LEC market—some 1000 smaller Independents—since together they spend only about 13% of the Independent total, and only 3.6% of the LEC total including BOCs. It is estimated the 1989 budgets of the small Independents will total $720 million.

The Big Spenders

The biggest spender among the BOCs is Southern Bell, which budgeted $1.9 billion for network expansion this year (Table 2). That's $148.9 million, or 8.4%, over 1988. Not surprisingly, Southern Bell's parent, BellSouth, tops the other six Bell regional holding companies in 1989 spending plans. BellSouth's total budget for this year is $3 billion—which is $156 million, or 5%, over last year.

Four other RHCs—Ameritech, Pacific Telesis, Southwestern Bell and U S West—show spending increases for 1989, but they are more modest. Nynex is down $339 million, a 10% cut. We estimate Bell Atlantic will spend at the same level this year as last—$2.5 billion. And Bell Atlantic will go slightly higher in 1990.

Among the Independents, the largest spender by far is GTE, with a $2.285 billion network expansion budget for 1989, 3.5 times as big as the next biggest budget—United Telecom's $653 million. Despite its magnitude, the GTE budget represents a $43 million, or 1.8%, *drop* from last year.

Taken as a whole, the 18 Independents appear to be on a spending spree. Twelve of the 18 have increased their budgets for 1989, some quite substantially. For example, Cincinnati Bell set its 1989 budget at $102.5 million, a whopping 24% increase over last year. Telephone and Data Systems, the Chicago-based Independent holding company, is up 20%, to $50.6 million for 1989. C-Tec, however, holds the record for the largest increase in spending—with a substantial 30% increase, to $36.1 million.

The other six Independents surveyed reported budget cuts for 1989. United Telecom, like fellow giant GTE, only cut its budget by 1.8%. Another among the top five Independents—Centel—also reported a budget reduction—a substantial 10% cut from $184.9 million in 1988 to $166.3 million for this year. Centel, however, expects to be right back up to $184 million-plus next year.

Taking a closer look at the future, our study shows that three of the seven RHCs—Ameritech, Nynex and Pacific Telesis—predict higher network expansion spending in 1990. We expect level spending at both Bell Atlantic and U S West. And both BellSouth and Southwestern Bell anticipate decreased budgets for 1990.

Only eight of the top 18 Independents expect to spend more in 1990. The other 10 say budgets will be down next year.

IXC Ups and Downs

As indicated earlier, the IXCs hit their spending

continued on page 31

Table 2

LOCAL EXCHANGE CARRIERS' 1986-1990 NETWORK EXPANSION SPENDING

($000,000)

	Actual 1986	Actual 1987	Projected 1988	Projected 1989	Projected 1990
Ameritech					
Illinois Bell	653.5	598.8	588.4	611.4	638.0
Indiana Bell	234.9	223.5	192.7	192.7	200.8
Michigan Bell	531.2	522.9	502.0	506.0	515.0
Ohio Bell	386.2	388.2	365.8	349.8	334.5
Wisconsin Bell	194.8	165.5	179.7	180.0	180.0
Subtotal	2,000.6	1,898.9	1,828.6	1,839.9	1,868.3
Bell Atlantic Network Services					
Bell of PA	696.1	765.2	890.1		
C&P Companies	997.0	1,004.5	978.1		
New Jersey Bell	587.9	594.3	631.8		
Subtotal[a]	2,281.0	2,364.0	2,500.0	2,500.0*	2,550.0*
BellSouth					
Southern	1,695.6	1,823.5	1,761.4	1,910.3	1,895.2
South Central	1,121.8	1,125.9	1,181.2	1,187.8	1,092.3
Subtotal	2,817.4	2,949.4	2,942.6	3,098.1	2,987.5
Nynex					
New York	1,325.5	1,437.7	1,443.7	1,324.8	1,475.8
New England	759.1	869.5	880.0	760.0*	895.0*
Subtotal	2,084.6	2,307.2	2,323.7	2,084.8	2,370.8
Pacific Telesis					
Pacific Bell	1,641.9	1,468.8	1,475.0	1,500.0	1,550.0
Nevada Bell	16.9	26.5	27.0	26.0	27.0
Subtotal	1,658.8	1,495.3	1,502.0	1,526.0	1,577.0
SW Bell Telephone	1,863.8	1,397.8	1,150.0	1,350.0	1,300.0
US West Communications					
Mountain States	883.6	815.6			
Northwestern Bell	403.5	443.0			
Pacific NW	382.7	359.0			
Subtotal[b]	1,669.8	1,617.6	1,582.0	1,650.0*	1,650.0*
BOC Total	14,376.0	14,030.2	13,828.9	14,048.8	14,303.6
18 Largest Independents					
GTE	2,610.0	2,700.0	2,328.0	2,285.0	2,173.0
United	549.6	645.8	665.6	653.4	681.8
Contel	464.6	490.6	553.3	564.6	527.1
SNET	294.9	387.2	326.0*	335.0*	330.0*
Centel	179.2	196.4	184.9	166.3	184.7
Subtotal	4,098.3	4,420.0	4,057.8	4,004.3	3,896.6
Alltel	152.7	151.4	145.0	151.1	153.3
Cincinnati	79.7	91.2	82.6	102.5	92.0
Puerto Rico Tel	162.0	220.0	230.0	160.0*	155.0*
Rochester	85.2	84.2	82.8	92.9	95.5
Century	40.0	37.0	38.0	41.0	34.0
Subtotal	519.6	583.6	578.4	547.5	529.8
TDS	29.8	37.5	42.0	50.6	42.0
Lincoln	27.6	28.4	34.4	35.3	22.7
Pacific Telecom	45.0	37.0	40.4	46.8	44.8
C-TEC	24.9	27.6	27.6	36.1	29.8
Anchorage	33.4	25.9	17.2	9.8	19.8
Illinois Consolidated	13.0	8.0	8.0	7.3	8.0
Citizens Utilities	27.3	33.4	27.3	29.7	30.0
CP National	14.0	13.4	18.5	21.1	23.0
Subtotal	215.0	211.2	215.4	236.7	220.1
Total Top 18 Independents	4,832.9	5,215.0	4,851.6	4,798.1	4,646.5
Bell Operating Co's.	14,376.0	14,030.2	13,828.9	14,048.8	14,303.6
Top 18 Independents	4,832.9	5,215.0	4,851.6	4,798.1	4,646.5
All Other Independents*	725.0	782.0	728.0	720.0	697.0
Total LECs	19,933.9	20,027.2	19,408.5	19,566.9	19,647.1

Source: Telephony/Market Research

* estimated by Telephony

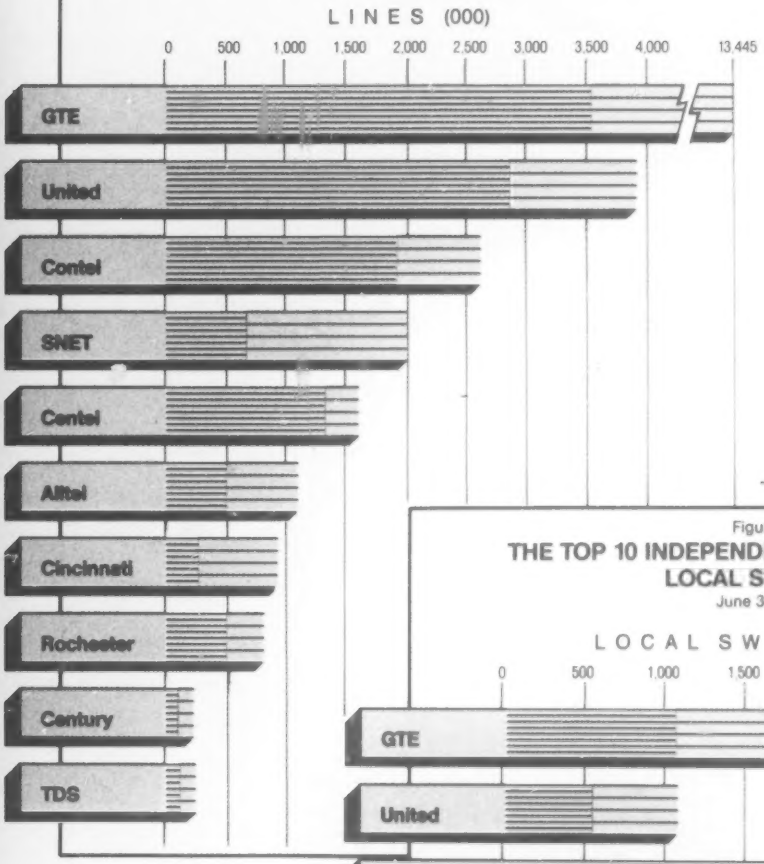
a reported as composite

b merged into US WEST Communications in 1988

Figure 4

THE TOP 10 INDEPENDENTS' DIGITAL STATUS: EQUIPPED LINES

June 30, 1988



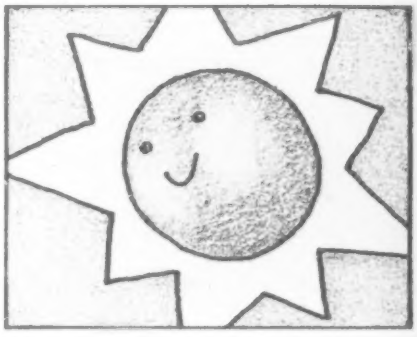
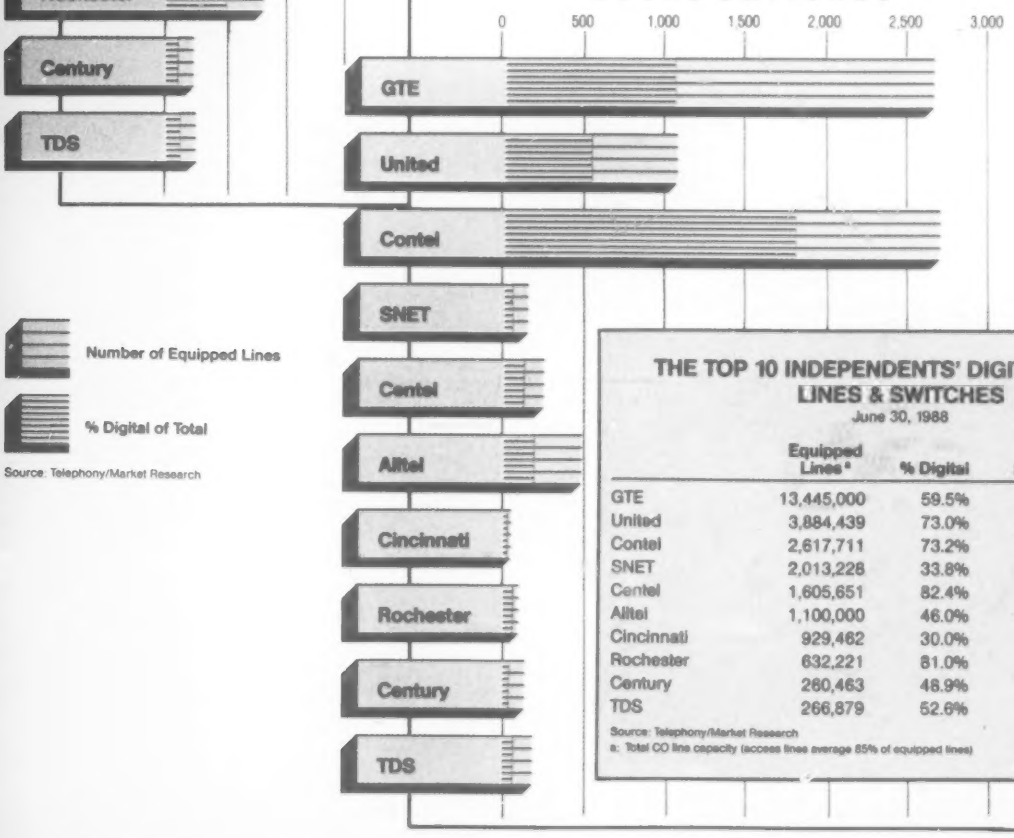


Figure 4A

THE TOP 10 INDEPENDENTS' DIGITAL STATUS: LOCAL SWITCHES

June 30, 1988



Source: Telephony/Market Research

THE TOP 10 INDEPENDENTS' DIGITAL STATUS: LINES & SWITCHES

June 30, 1988

	Equipped Lines [a]	% Digital	Local Switches	% Digital
GTE	13,445,000	59.5%	2,664	39.5%
United	3,884,439	73.0%	1,022	47.0%
Contel	2,617,711	73.2%	2,702	67.0%
SNET	2,013,228	33.8%	148	38.0%
Contel	1,605,651	82.4%	246	51.6%
Alltel	1,100,000	46.0%	501	39.0%
Cincinnati	929,462	30.0%	58	50.0%
Rochester	632,221	81.0%	104	70.0%
Century	260,463	48.9%	152	34.4%
TDS	266,879	52.6%	209	34.1%

Source: Telephony/Market Research

a: Total CO line capacity (access lines average 85% of equipped lines)

peak in 1986, principally because of a major drive to convert their networks to fiber optic transmission facilities. Since then their budgets have drifted downward. Our study tracked only the four top IXCs—AT&T Communications, MCI, US Sprint and NTN. Among these, only US Sprint plans to spend more this year—$650 million, a $25 million increase over 1988. The biggest and the smallest of the group are holding steady—AT&T with a $3 billion budget and NTN with $100 million. MCI's 1989 budget is down $35 million from last year, to $715 million.

For 1990, NTN says it will *double* its spending, to $200 million. The other IXCs refused to gaze in the crystal ball. We, however, came up with these estimates: AT&T will spend $2.9 billion in 1990, down $100 million; MCI will spend $650 million, down $65 million; and US Sprint will hold steady at $650 million.

The Force

Two major technological innovations—the change from analog to digital switching and the move toward fiber optic cable as the transmission medium of choice have driven LEC spending in this decade.

The Independents were the first to get into digital in a big way. That head start is reflected in the lineup of digital leaders (Figure 4 and Figure 4A). On top is Centel, with 82% of its 1.6 million access lines terminating on digital switches. Contel has about 73% digital lines and United Telecom has 70%.

Among the RHCs, Nynex is the leader of the pack, with about 38% of its 16.4 million lines digital (Figure 3 and Figure 3A). At the bottom is Southwestern Bell, with only about 18% digital lines.

The drive toward fiber optics began in the early 1980s and accelerated fantastically in the last three years (Table 3 and Table 4). As an illustration, in the nine months between Dec. 31, 1987, and Sept. 30, 1988, the amount of fiber optic cable installed at the BOCs increased 23%! At the end of that period Southern Bell alone had 211,805 fiber miles of optical cable in service.

Money is, of course, what makes it happen and network expansion and improvement does not come at bargain basement prices. And that's precisely why the country's LECs will cheerfully lay out $24 billion this year to assure that the forecast for the future is increasingly sunny—with few clouds in sight. ■

Table 3

FIBER OPTICS: BOC GROWTH IN FIRST 9 MONTHS OF 1988

	Fiber Optic Sheath Miles 12/31/87	9/30/88	% Growth	FO Fiber Miles as of 9/30/88
Ameritech				
Illinois Bell	1,996	2,356*	18%	38,244
Indiana Bell	1,435	1,648	14%	24,773
Michigan Bell	1,597	1,865	17%	55,463
Ohio Bell	977	1,199	23%	22,295
Wisconsin Bell	797	855	7%	22,000
Subtotal	6,802	7,923		
Bell Atlantic				
C&P Companies	2,600*	3,401	31%	109,264
New Jersey	1,057	1,466	39%	41,577
Bell of PA	2,649	3,546*	34%	97,389
Subtotal	6,306	8,413		
BellSouth				
Southern Bell	7,257	9,445	30%	211,805
South Central	4,173	5,022	20%	79,508
Subtotal	11,430	14,467		
Nynex				
New York	2,740	3,376	23%	144,381
New England	2,215	3,300	49%	116,206
Subtotal	4,955	6,676		
Pacific Telesis				
Pacific Bell	2,970	3,564*	20%*	nr
Nevada Bell	64	69*	8%*	nr
Subtotal	3,034	3,633		
SW Bell	5,973	6,905	16%	202,335
US West Comm.	7,021	7,769	11%	123,300
Total	45,521	55,786	23%	

Source: Telephony/Market Research
nr: no report
* estimated by Telephony

Table 4

TOP 15 INDEPENDENTS' INSTALLED FIBER

(September 30, 1988)

	Sheath Miles	Fiber Miles
GTE	nr	95,500
United	3,155	21,454
Contel	9,000	54,000
SNET	639	26,734
Centel	1,079	7,973
Alltel	510	4,100
Cincinnati Bell	209	7,629
Puerto Rico Tel	nr	nr
Rochester	330	3,739
Century	177	938
TDS	250	1,500
Lincoln	415	2,421
PacificTelecom	265	1,816
C-TEC	212	1,601
Anchorage	107	1,806

Source: Telephony/Market Research
nr: no report